

Project Code and Title

B.01.04 Door Latch Integrity

Project Objective

Develop one or more test procedures to evaluate door latch integrity

Background

FMVSS 206 was established in September 1968 based on SAE requirements with increased loads on the door latches. This requirement was extended to back door latches in September 1995. A 1989 evaluation concluded that FMVSS 206 had a 15% effectiveness in reducing ejection fatality risk. NHTSA has been conducting research on door opening and door latch failures since 1985.

Problem Definition

The target group is all vehicle occupants ejected through doors which have opened due to latch failure. There are an average of 2,974 annual ejections door openings (NASS CDS, 1988-1994). A NHTSA investigation of NASS hardcopy cases indicated that about half of the accidents showed indications of latch activation while the rest of the door openings appeared to be due to structural failures.

Research Approach

Develop test procedure and performance criteria for evaluating door latch integrity. Evaluate current designs and discriminate best performers

Potential Impact/Application

Upgrade of FMVSS 206

Key Milestones

ANPRM expected Fall 1996

RESOURCE REQUIREMENTS	FY96	FY97	FY	FY	FY
Contract Money (\$K)	100	100			

Project Manager(s)

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Completion Date

ANPRM expected Fall 1996

ANPRM support ongoing through FY97

Publications

- 1 Willke, Monk, Sullivan, Cohen, "Door Latch Integrity", DOT HS 807 374, December 1994
- 2 Howe, Leigh, Willke, "Door Latch Integrity Study: Evaluation of Door Latch Failure Modes", DOT HS 808 188, January 1994

Keywords : Door Latches, Ejection

Project Tasks

<u>Task</u>	<u>Title and Description</u>
Task 1	Accident Analysis
Task 2	Additional Latch Strength Testing
Task 3	Compliance Test Procedure
Task 4	Engineering Analysis of Door Latch Systems
Task 5	Door Latch System Testing
Task 6	Fork Bolt-Detent Lever Bypass
Task 7	Linkage Activation
Task 8	Inertial Loading
Task 9	Structural Loading
Task 10	Test Procedure Development (Tasks 6-9)
Task 11	Development of Secondary Latch
Task 12	Latch Tests for Loading during Rollover
Task 13	Additional Latch Testing
Task 14	Rear Door/Hatch/Liftgate Latch and Hinge Testing
Task 15	Evaluation of FMVSS No. 214
Task 16	Development of Sliding Door Test Procedure

Task	Start Date	Projected Completion Date	Status/Responsibility
1	1/91	2/92	Completed, but frequently updated
2	9/93	12/93	Completed
3			on-hold
4	5/91	12/91	Completed
5	11/91	12/92	Completed
6	5/92	6/93	Completed
7	7/93	Canceled	Canceled
8	6/93	12/95	Completed
9	9/93	12/93	Completed
10			On-hold
11	1/94	12/95	Completed
12	5/94		Completed
13	8/94	1/95	Completed
14	1/95	4/95	Completed
15	10/95	6/96	Completed
16	2/96	3/97	In-progress